Bibliographic identification

KUČEROVÁ, Klára. Long-term monitoring of impact of competitive swimming in statics and dynamics of the spine. Prague: Charles University, 2nd Faculty of Medicine, Department of Rehabilitation and Sports Medicine, 2017, 59 p. Supervisor of the bachelor´s thesis Mgr. Magdaléna Lepšíková.

Abstract

Swimming is a physical activity that is often recommended by physicians as compensatory activity. It is symmetrical sport which takes place in aquatic environment. This sport has many benefits and can be done at any age. Our goal was to find out if competitive swimming had an effect on statics and dynamics of the spine. To measure static sagittal parameters we used DIER Formetric III 4D. Dynamic tests were measured by spinal development tests. The trunk stabilization was detected using Dynamic Neuromuscular Stabilization (DNS) concepts. We observed 11 children aged 11 - 12. These children were examined twice in the bachelor thesis, first one before the start of racing swimming and second one after 10 months. In our diploma thesis, these children were examined again after 3 years of racing swimming. We also watched a set of 11 adult swimmers. We compared their results with standards. After three years of racing swimming in children, there was no statistically significant change in size of thoracic kyphosis and lumbar lordosis. Increased mobility of the whole spine, lumbar spine and range to lateroflexia has occurred. On the contrary, the mobility of the thoracic spine has been reduced to extension. In adult swimmers, thoracic kyphosis values were higher than normal and lumbar lordosis values lower than normal. In dynamic tests we noticed increased mobility of the whole spine, increase the mobility of the lumbar spine and decrease the mobility of the thoracic spine to extension. Racing swimming therefore does not affect the increase in sagittal spine curves. It affects the increase of the lumbar and thoracic spine movement in the flexion and the increase of the lateroflex and the reduction of the mobility of the thoracic spine to extension.

Keywords

Sagital spinal alignment, spinal mobility, swimming, Dynamic Neuromuscular Stabilization, rasterstereography